



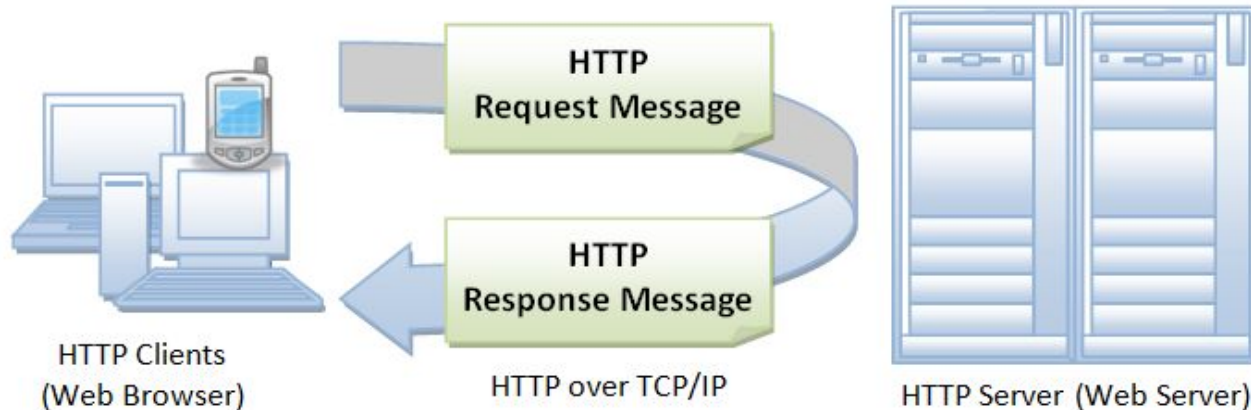
HyperText Transfer Protocol(HTTP)

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Hypertext Transfer Protocol

- The communication between Client and Server in the World wide web (i.e. Internet) happens using Hypertext Transfer Protocol (HTTP). This Protocol defines by which the request messages are formatted and transmitted.
- An HTTP client sends a request message to an HTTP server. The server, in turn, returns a response message. In other words, HTTP is a *pull protocol*, the client *pulls* information from the server (instead of server *pushes* information down to the client).



Browser

- When we type a **URL** in the address bar or click on a hyperlink, the browser sends these actions to the server using the **HTTP** Protocol.

e.g. <http://www.nowhere123.com/index.html>

- The browser turns the URL into a *request message* and sends it to the HTTP server.
- Then the HTTP server interprets the request message and returns you an appropriate response message , which is either the resource you requested or an error message.

- (1) User issues URL from a browser
http://host:port/path/file



- (5) Browser formats the response
and displays

Client (Browser)

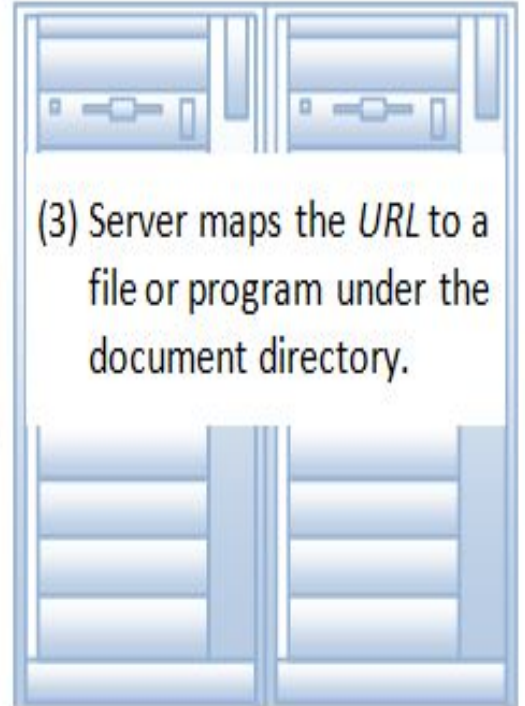
- (2) Browser sends a request message

GET *URL* HTTP/1.1
Host: *host:port*
.....
.....

- (4) Server returns a response message

HTTP/1.1 200 OK
.....
.....
.....

HTTP (Over TCP/IP)



- (3) Server maps the *URL* to a
file or program under the
document directory.

Server (@ *host:port*)

Uniform Resource Locator

→ A URL (Uniform Resource Locator) is used to uniquely identify a resource over the web.

URL has the following syntax:

Protocol : // hostname : port/path-and-file-name

There are 4 parts in a URL:

- ★ *Protocol*: The application-level protocol used by the client and server, e.g., HTTP, FTP, and telnet.
- ★ *Hostname*: The DNS domain name (e.g., www.nowhere123.com) or IP address (e.g., 192.128.1.2) of the server.
- ★ *Port*: The TCP port number that the server is listening for incoming requests from the clients.
- ★ *Path-and-file-name*: The name and location of the requested resource, under the server document base directory.

For example, in the URL <http://www.nowhere123.com/docs/index.html>,

The communication protocol is HTTP, the hostname is www.nowhere123.com, the port number was not specified in the URL, and takes on the default number, which is TCP port 80 for HTTP, the path and file name for the resource to be located is `"/docs/index.html"`.



THANK YOU